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The Development of Telecommunications: The Outcome of an Ecology of Games

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Since the AT&T divestiture, the telecommunications industry has been undergoing dramatic change. A great deal has been written about the nature of the forces driving this change and about various trends in telecommunication infrastructures and services. However, this literature seldom describes how new communication infrastructures and services are planned and developed within the post-divestiture context. This paper focuses on this decision-making process and offers a theoretical perspective, called an "ecology of games," which is suggested by a case study of one company's entry into the microwave communications business.

Keywords: Telecommunications, Telephone, Microwave, Communications technology, Decision-making, Divestiture, Telecommunications planning, Development of communications, Social impacts.

1. Introduction

For decades, the development of telecommunications networks and services was a non-issue in the United States. Telecommunications planning issues were on the agenda of only a few key agencies of the federal government. [1] At the local level, public discussion of the development of telecommunications was rare and most often limited to cable television. Few people questioned the adequacy of the nation's telephone network and, therefore, few questioned the privatization of the planning and development process.

Since the divestiture of AT&T, however, there

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[1] Compared, for example, to debates over mass transit, the development of telecommunications has involved a limited range of participants and has been confined to national policy circles.

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has been growing interest in public and private efforts to plan the development of telecommunications infrastructures and services [18,19,25]. As a consequence, the proper role and locus for public involvement in telecommunications planning has become a controversial issue. In 1987, for example, a bill was introduced to the California Legislature to promote cooperation between the public and private sector in telecommunications planning projects, only to be quickly vetoed by the governor. [2] State and local agencies, particularly councils of governments, have been especially concerned over the institution of a public-private planning process. And this concern is not limited to the U.S. For example, several projects have been launched in Japan that involve local and regional agencies in efforts to work with private industry to comprehensively plan the development of new telecommunication infrastructures and services. [3]

There are at least five reasons for this new focus on planning. First, many public officials have accepted the view that telecommunications is a strategic resource in their efforts to promote industrial and economic development by, for example, affecting business location decisions [10,18,19,25]. Second, they see the potential for telecommunications addressing other public problems. Telecommuting projects have been discussed as a means for mitigating peak-hour transportation problems. Telephone, cable and microcomputer systems have been offered as channels for facilitating the dissemination of public information and creating the potential for more dialogue between citizens and public agencies. Third, the public sector is a major user of telecommunications and wants to ensure the availability of systems that meet its needs. Fourth, as the federal regulatory role in telecommunications has shifted towards insuring competition and as the divested regional Bell companies position themselves to offer new services, greater responsibility for oversight of the telecommunications industry has devolved upon state and local agencies. Fifth, state and local agencies which have transportation and land-use planning expertise, view telecommunications as a new and growing area in which to practice it.

In pursuing public and private planning efforts focused on the development of telecommunicans, planners can benefit from an understanding of how new telecommunications systems are currently developed. They need to be informed about how decisions are made before they can successfully position themselves to participate in the decision-making process. While the communications literature has a great deal to say about new technologies and policies, it says little about decisions concerning the development of new telecommunications networks or services [23]. [4] How are these decisions made? Who is shaping the development of telecommunications?

This paper approaches this issue from a political perspective. The paper first introduces four political perspectives on decision-making processes that involve the public and private sector. It then provides a case study of one firm's decision to enter the microwave communication's business. The case is then used to illustrate several general themes that are best captured by one of the four competing perspectives, called an "ecology of games" [13].

2. Perspectives on the Decision-making Process

General perspectives on the decision-making process might provide alternative frameworks for understanding decision-making related to telecommunications. Four of the most prominent perspectives in the public policy literature are legal-in-

[2] California Assembly Bill No. 456 was introduced by Assembly member Gwen Moore on February 2, 1987. The bill would: "... require the Department of General Services to implement telecommunication planning projects,... that involve representatives of state government and local public sector agencies, especially councils of governments, including local governments, and educational institutions."

[3] One is a so-called K-NET project in Kanagawa Prefecture, directed by a study commission composed of representatives from the public and private sector.

[4] Communications and policy researchers have provided overviews of the politics of broadcasting (e.g. [12]); case studies of the politics of cable franchise awards; descriptions of the actors and policy issues surrounding national cable legislation (e.g. [8]); and studies of the political actors and processes driving national telecommunications policy [24]. And there have been recent studies launched in both the United States and Western Europe to examine the driving forces and social implications of new media at the local level [9,15]. But studies of the decisions affecting the development of telecommunications infrastructures and services are rare.

stitutional, elitist, pluralist, and what Norton Long labeled as an "ecology of games." [5] All are derived from the literature on the politics of decision-making but each offers different answers to the question: Who governs communications, and, through what mechanisms or processes?

2.1. The Legal-Institutional Perspective

Most images of telecommunications decision-making are based on legal prescriptions that define the role of various public and private actors within any given national and local context. A description of the decision-making process is developed from an analysis of legislation, court rulings, and administrative proceedings. For the most part, a legal-institutional perspective dominated discussions of communications policy in the U.S. prior to divestiture. The planning and development of telecommunications was privatized within AT&T and its Bell Operating Companies. As a consequence, discussions focused on Congressional debates, the Federal Communications Commission, state public utility commissions and the fragmentation of authority over communications among numerous federal, state, and local agencies, since these affected AT&T's mission (e.g. a nationwide, telecommunications network to provide universal services) and its ability to plan and develop telecommunications. Since divestiture, the value of this legal-institutional perspective is no longer clear. The federal role has changed and other public and private actors have entered this policy arena [22].

2.2 The Elite Perspective

The elite perspective was derived from empirical research on decision-making that indicates variations from legal-institutional images of the decision-making process. Elitists argue that control over major development decisions is concentrated in a small number of corporate and economic elites, representing the major communication industries [17]. This elite is said to be supported in day-to-day decision-making and lower level decisions affecting policy and implementation by a variety of "understructure" personnel within the corporate and public sectors [11,20]. These understructure personnel might include technocrats, the experts, researchers, and specialists who know and understand the technology [17], and bureaucratic elites, the managers and technocrats of the public agencies responsible for regulating communications [4]. [6]

2.3 The Pluralist Perspective

The pluralist approach assumes that power and influence over decisionmaking will be distributed among a variety of participants from both public and private organizations, who represent an array of often conflicting interests and values [5,12]. These might include corporate and economic elites, technocrats, and bureaucratic elites. However, in contrast to the elite perspective, politicians, accountable to the general public, are viewed as influential in the process and outcomes of decision-making [5,12,21].

2.4 An Ecology of Games Perspective

An alternative perspective, called an "ecology of games," was originally formulated by Norton Long in discussing the politics of local communities [13]. From this perspective, different actors and organizations in society are conceptualized as playing a variety of different games within which they act according to goals and strategies relevant to the games in which they are primarily involved. Games "provide a sense of purpose and a role," and "a set of strategies and tactics" for organizations, groups, and individuals [13]. The different games are interrelated by some actors simultaneously participating in different games and some

[5] The elite and pluralist perspectives have been used as frameworks for the study of communications policy processes at the federal level [12,18]. But they have not been used to study decisions concerning the development of telecommunications per se in contrast to the development of public policy. Instead of analyzing the structure of communications policy-making, the emphasis in this paper is on the process of formulating decisions that affect the development of communications. From this view point, policy is seen as only one factor in this process, albeit a potentially important one.

[6] Within the elite approach, elites have been defined in at least three different ways. Elites have been defined as positional, those in positions of authority in institutions [20]; as reputational, those who have reputations for influencing the policy-making process [11], and, as decisional, those who actually participate in formulating and making decisions [5].

transferring from one game to another. The outcome for society as a whole is the net result of the individual games and their interactions – i.e. the outcome of an ecology of games.

This perspective can be applied to telecommunications as well as other policy areas. Individual actors can be viewed as rationally pursuing their goals within the context of the games they play. However, the development of telecommunications is viewed as the outcome of a history of games – a regulatory policy game, anti-trust enforcement game, an economic development game, a real estate game, a land development game, a cable franchise game, a rate regulation game and so on – many of which are not aimed at the development of telecommunications per se, but affect it nonetheless. In this respect, no one governs the development of communications in the rational-comprehensive sense that the act of governing might connote. Instead of planning the development of telecommunications in a rational-comprehensive manner, actors make decisions about working at home, architectural design, shared tenant services, institutional cable networks, rate regulation, tax policy and so forth that effect the pace and direction of telecommunications developments.

Which, if any, of these alternative conceptualizations provides the best perspective on how telecommunications is actually developed? In the following section, the development of a microwave communications network is traced by following the path of its principal developer. This case study is not used to argue that one particular case is more empirically valid. No single case study could claim to generalize beyond its limited focus. However, the case does suggest several themes that are best accomodated by the ecology of games perspective, which indicates that this perspective might be useful to the interpretation of other cases in the development of telecommunications.

3. The Development of a Microwave Communications Network

From an ecology of games perspective, the development of telecommunications infrastructures and services can be viewed as the outcome of the interaction of a variety of different games, being played by different players, each with somewhat different stakes and interests. Therefore the nature of developments are not only difficult to predict, veering from any trajectory formed by extrapolating the history of individual players, but also likely to differ from the strategic plans of many players. The movement of a large publishing company into the microwave communications business illustrates such a process.

3.1 The Times Mirror Company

In the mid-1980s, The Times Mirror Company was a $2.8 billion a year "media communications company" [26,14]. Headquartered in Los Angeles, California, the company and its subsidiaries were located in over two dozen cities across the United States. Its principal revenue sources were newspaper publishing, newsprint and forest products, book publishing, information services, (including flight information and training programs, charts, maps, and directories), cable television, and broadcast television, in addition to other operations, including magazine publishing and art and graphics products (*Table 1*). However, print media, including newspaper, book, magazine, and other publishing, accounted for nearly 80 percent of the company's revenues. The remaining 20 percent involved the newer electronic media, including cable, broadcasting, software publishing, and an experimental venture with videotex.

The company's earliest roots were in newspaper publishing. It was incorporated in 1884 for $40,000, joining the *Los Angeles Times* (initially called the *Daily Times*) with the Mirror Printing Office and Book Bindery, which later was known as Times Mirror Press [3]. With the success of the *Los Angeles Times* newspaper, the company acquired newsprint mills and forest land in Oregon and Washington in 1948 to control its supply of newsprint. Following World War II, in 1948, the same year that the company acquired its newspaper mills, Times Mirror acquired its first cable company, a small system near its headquarters that served parts of Long Beach, California. But this initial move into cable television was an exception for the company, which, until the 1960s had not begun to enter into electronic communications and information services.

The company began to diversify in the 1960s and 1970s through the acquisition of businesses in the United States and abroad that were known for

Table 1
Profile of Times Mirror Company and Subsidiaries in 1983 [a]

Product or Service Area	Percent of Revenues
Newspaper Publishing (Los Angles Times, Newsday, Dallas Times Herald, The Denver Post, The Hartford Courant, The Advocate, Greenwich Time)	48
Newsprint and Forest Products (Publishers Paper Company)	13
Book Publishing (Matthew Bender & Company, The C.V. Mosby Company, Year Book Medical Publishers, Harry N. Adams, Inc.)	12
Information Services (Jeppesen Sanderson, Inc., Graphic Controls Corporation, Gousha/Chek-Chart, Times Mirror Press)	10
Cable Television (Times Mirror Cable Television, Times Mirror Videotex Services, Times Mirror Microwave Company)	6
Broadcast Television (Times Mirror Broadcasting with stations in Dallas, Austin, Birmingham, St. Louis, Harrisburg, Syracuse, and Elmira)	4
Other (including Times Mirror Magazines, Inc., and The Sporting News Publishing Co.)	7
	100%

[a] Source: The Times Mirror Company, *Times Mirror Factbook 1984*. Los Angeles, CA: The Times Mirror Company, 1984, pp. 5, 11.

their quality [1]. Specifically, in the 1960s, the company moved into the broadcast and cable television areas. It purchased television stations in Dallas and Austin, Texas, and five television stations owned by the Newhouse Newpaper Company. [7] In the cable area the company purchased additional cable operations acquiring Communications Properties, Inc. in 1979. By 1984, the company's cable subsidiary, Times Mirror Cable Television, Inc. (TMCT), rose from owning a single local franchise in the Los Angeles region to being one of the seven largest multiple system operators (MSOs) in the United States, operating 61 cable systems, serving nearly one million subscribers in over 300 communities in 16 states [26]. Despite these acquisitions, the company's interests were still primarily tied to print publishing (*Table* 1).

It was during the mid--1980s that the company more explicitly defined its business to be within the information and communication industry, leading the company to sell some businesses that were tangential to this focus. In addition, it acquired other media, communications, and information related businesses, and began efforts to concentrate its cable holdings within regions by trading franchises (subscribers) with other multiple cable system operators with similar business strategies. Another feature of the 1980s was a decision by the company to launch internal development efforts aimed at the creation of new services and businesses, which fueled the company's move into the videotex and software publishing business in the 1980s [1]. Throughout this history, it nurtered a traditional operating philosophy of granting a great deal of autonomy to its individual operating units – a tradition that is linked to the company's early history of guarding the editorial independence of the *Los Angeles Times*.

3.2 Times Mirror Microwave Communications Company

Cable originated as a community antenna television system, amplifying and retransmitting over-the-air signals received by a master antenna to a community's cable subscribers. In 1965, through the Federal Communication Commission's (FCC) First Order and Report, operators were restricted from "duplication," retransmitting a program from a distant station that was being shown by the local broadcast station. Then, broader restrictions on the importation of "distant signals," meaning a signal originating from a point too distant to be received by ordinary television receivers, were established by the FCC's Second Order and Report, in 1966, and then again in 1968. These restrictions undercut the ability of cable operators to offer television channels in addition to those that could be received over-the-air, which, therefore, undermined a principle selling point for cable in urban areas. But these restrictions were viewed as justified in order to protect the markets and advertising revenues of local broadcasters. Since that time, however, the courts and the FCC lifted most restrictions on the importation of distant signals and it became an attractive feature offered to cable subscribers, particularly to the residents of small towns and cities who would not otherwise have access to independent television stations of the larger cities of their region. Ini-

[7] In the summer of 1985, Times Mirror sold three of its seven television stations (*Los Angeles Times*, September 24, 1985).

tially, most cable operators imported distant signals by installing a point-to-point microwave communications link between the television station and the head-end of the cable network.

In 1979, as part of its cable acquisitions, Times Mirror acquired communications Properties, Inc. (CPI), a cable television company, which served communities in parts of Texas and Ohio. By purchasing these cable facilities, it also became the owner of three small microwave companies in Texas and Ohio. The microwave facilities were used primarily to import video signals to CPIs cable companies, but also to distribute programming to the local affiliates of the major television networks. However, by 1979, the development of satellite communications already offered a more economical means for linking network television stations and cable systems. Compared to satellite communications, a terrestrial microwave communications network for cable systems, was less flexible as well as less economical, for this task only required one-way distribution of the video signal to more than one location. Thus, microwave communications for the distribution of television programming to television stations and cable systems was thought to many to be a declining business.

Given this bleak future for terrestrial microwave systems for the distribution of television signals, the company considered selling its microwave facilities soon after CPI was acquired. However, the General Manager of the Microwave Division (later called Times Mirror Microwave Communications Company, or TMMCC) saw an opportunity to lease some of the microwave facilities to a young company in the voice and data business, MCI Communications. MCI was interested in leasing circuits in Texas because it did not have its own network fully in place and did not wish to obtain circuits from its competitor, AT&T, if there were other options. A similar deal to lease microwave circuits in Ohio soon was struck with Southern Pacific-Sprint (later GTE Sprint), another emerging competitor to AT&T in the long distance business [1].

These initial moves into a new business area were undertaken by the General Manager of TMMCC on his own initiative, without any strategic

Fig. 1. Times Mirror Microwave Communications Company's nationwide voice-data network. Scource: Times Mirror Microwave Communications Company, 3307 Northland Drive, Suite 506, Austin, Texas.

direction from Times Mirror corporate. This action was consistent with Times Mirror's general policy of placing authority and responsibility on its operating units. It was not until the TMMCC General Manager requested major new funding to upgrade and expand the microwave network that corporate management became involved. When it did, a detailed study of the U.S. long distance business was undertaken, alternatives were evaluated, and a business plan was prepared that would position TMMCC as a "carrier's carrier." Based on this study, as well as TMMCC's early success in repositioning its facilities to serve a new class of customers, Times Mirror became convinced that a "window of opportunity" existed for wholesaling microwave circuits to a growing group on entrants into the long distance voice and data communications business [1].

The argument in support of this venture was two-fold, both technological and financial. Technologically, advancements in microwave relays had made them increasingly well suited for voice and data communications. And the technology was already well developed and easily put into place, when compared to other terrestial communications systems. While fiber optics seemed to define the future of long distance communications, a microwave network could be constructed years before a fiber optics system would be put in place. And for point-to-point voice and data communications, in contrast to their use for one-way broadcasting of video signals, satellites were not yet developed to a point that they were as well suited. Financially, the company had the resources to construct such a network while the emerging long distance companies did not yet have the traffic nor the capacity and resources to construct their own networks in all parts of the nation. For a time, the Times Mirror Microwave Communications Company could provide to the new long distance companies an economical alternative to leasing from their major competitor, AT&T.

By 1985, the subsidiary had upgraded systems and added nodes on the network to the point that it had installed a terrestial microwave communications network that spanned the nation, from Los Angeles to Pittsburgh, with plans for its extension to other east coast cities (*Fig. 1*). In 1984, the company expected the network to reach 31 cities in 17 states upon its completion [26]. Serving such common carriers as MCI, Sprint, GTE, and ITT, Times Mirror Microwave Communications Company became an important actor in voice and data communications – a business that few would have expected Times Mirror to enter based only on its strategic plans and past acquisitions.

In the late-1970s, the company's business plans did not envision a major move into the microwave communications business. To the Times Company, this was a rational and successful response to a "target of opportunity" [1]. And in hindsight, there was an environment at Times Mirror that fostered such ventures in that it had: a tradition (since the days of its early founder, Harrison Gray Otis and his son-in-law, Harry Chandler) of valuing entrepreneurial executives; a management philosophy that permitted its operating companies to make important decisions; an emphasis on the internal development of new businesses; and, a definition of the company that was congenial to a new communications venture.

Nevertheless, this new business was not within the mainstream of the company. Because of this, it was sold in 1986, as part of a broader company decision to focus on its core media and information business and divest itself of several business that more tangential, such as art supplies and its microwave communications business [1,27]. Thus, the company's exit, much like its entry, was, in part the outcome of decisions made about different matters, by various actors, involved in different organizations, which together influenced the development of a microwave communications network.

4. General Patterns and Themes

It is difficult to generalize from any case study of what is undoubtedly a unique set of events driven by particular historical circumstances. Nevertheless, it is possible to cull from the details of this case a number of more general patterns and themes that can be validated by the degree to which they are compatible with the themes suggested by similar case studies. [8]

[8] Several of the author's on-going case studies of the development of urban communication systems inform the argument of this paper. The cases include a study of the adoption and implementation of cable systems by the City of Palo Alto and the Mid-Peninsula region of California, and the development of cable and telecommunications systems within the City and metropolitan area of Los Angeles.

First, the development of this microwave communications network seems to have been the outcome of the interaction of more incremental business and regulatory decisions made by the Times Mirror Company, its subsidiaries, several common carrers, and state and federal regulatory agencies. Rational-comprehensive planning was conducted at one stage by corporate planners within the Times-Mirror headquarters. However, this was only at one stage of a historical chain of decisions within the company and it was limited to one of a multitude of actors, all of whose choices affected the development of this network. Likewise, the development and design of this coast-to-coast terrestrial communications network was not planned long in advance by a small group in corporate headquarters. It is unlikely that any actor involved in this business made *the* decision or wrote *the* plan to build the long distance network. Actors made decisions about other things, such as whether to purchase a cable system; whether to sell or lease an under-utilized microwave facility; and whether to focus on the core businesses of the company. Nor was it the product of a pluralistic process of bargaining and negotiation among all the major actors.

Instead, the network appears to be the consequence of numerous actors playing in different but sometimes interrelated games that affected the development of this communications infrastructure. It was a product of Times Mirror's decision to diversify into the cable business and to purchase a specific cable television company, CPI, which happened to entail the purchase of three small microwave companies. The idea of becoming a carrier's carrier came much later. It was the product of an entrepreneurial general manager of the microwave facility, who saw an opportunity to lease his facilities to MCI rather than sell. It was influenced by federal regulatory decisions and technological developments that facilitated the emergence of competing long distance carriers. It was dependent on decisions by the then fledgling common carriers to lease microwave facilities. And the network required Times Mirror corporate decisions to support the development of this business opportunity. More importantly, it was the interaction of these decisions rather than any single decision that was key to the eventual outcome.

Second, while elites played an important role in the development of this telecommunications network, their activities and interests seem to be more circumscribed than suggested by an elitist perspective. It was a manager who seemed to play the most critical role and largely because he was involved in several overlapping games, including his game focused on making something of the existing microwave facilities, searching for facilities to support the long distance companies, and scouting out new business ventures for Times Mirror. His activities seemed to be critical in coordinating various more or less independent games.

Third, conflict did not characterize the important decisions, as one might expect from a pluralist perspective. A game perspective does not deny the possiblity that some games could be characterized by pluralistic conflict, particularly games involved in the public policy process. However, it is quite compatible with the degree to which these decisions did not involve conflict either among the contestants or in the public arena.

Fourth, the political system relevant to decisions affecting this telecommunications network changed from decision to decision. That is, the system of people, institutions, technologies, and policies relevant to the purchase of a cable company, for example, was different from that relevant to the development of a microwave communications network to cross the U.S. More traditional perspectives on decision-making – legal-institutional, elite, and pluralist – assume a more or less well defined political system in which relatively clear decisions are made about the development of communications. This was not the case here.

Fifth, the boundary of this ecology of games appears to have been the boundaries of the U.S. It was a national rather than a local or regional game in that the players, whether shopping for cable systems or deciding whether to invest in microwave systems, were considering the nation as a whole. Clearly, the boundaries of the games that shaped this telecommunications network were not confined to any local community or state, even though state and local government regulations, such as cable franchising procedures, were relevant to the outcome.

Finally, the rules of the games appear critical to the outcomes. Some rules were established by central players, such as Times Mirror, e.g. giving a great deal of autonomy to their subsidiaries. Other rules were established by actors not directly in-

volved in the particular case, such as the courts and the FCC. In fact, the principal role of governmental agencies in this ecology of games was defining its rules.

5. Summary and Discussion

An "ecology of games" might be a useful perspective for examining the factors shaping the development of telecommunications, at least in the post-1982 divestiture environment within in the United States. Based on a single case study, the interdependent actions of numerous players appears more descriptive of decisions surrounding the development of telecommunications than does either an exercise in rational-comprehensive planning and decision-making, or an elite or pluralistic process. From a macroscopic perspective, the development of telecommunications reflects many features of what Norton Long described as an "ecology of games."

To call this, or any other cases, "games," is not to deny their importance. The metaphor should not be interpreted to underplay the significance of the decisions or the actors. Just the opposite is the case. The serious and competitive posture that many people take to games makes this metaphor all the more applicable [13]. All of the games that shape the development of telecommunications are quite serious ones – effecting the livelihood of the players as well as the larger society.

There is some reason to expect the ecology of games perspective to apply to other cases in the development of telecommunications. First, there is a good deal of conventional wisdom and literature within the organizational behavior and management area that suggests that this case illustrates a rather general style of decision-making in modern organizations. Peter Drucker, conveyed this theme when he wrote:

> "... the business enterprise of today is no longer an organization in which there are a handful of "bosses" at the top who make all the decisions while the "workers" carry out orders. It is primarily an organization of professionals of highly specialized knowledge exercising autonomous, responsible judgement. And every one of them – whether manager or individual expert contributor – constantly makes truly enterpreneurial decisions, that is, decisions which affect the economic characteristics and risks of the entire enterprise. He makes them not by "delegation from above" but inevitably in the performance of his own job and work" [6].

Drucker's description of decision-making in organizations could easily be drawn from this case study of the development of a microwave communciations business. Second, research on the development of other kinds of communication systems and in other national setting has come to similar conclusions regarding the value of this perspective (e.g. [7]).

Nevertheless, this paper only sketches the preliminary outlines of a theoretical perspective. It is only a few steps beyond a useful metaphor. Its validity will depend on a more detailed exposition of this perspective and its differences in relation to competing perspectives. It will also require more empirical confirmation, in that other research, in other contexts, should find this perspective of explanatory value.

Regardless of these questions and the need for further theoretical and empirical specification, it points to a promising direction for research. It could serve to orient research toward identifying and exploring various games, for example, rather than focusing attention on a more macro-level decisionmaking process. And it might offer a framework to examine specific actors, such as local governments. From an ecology of games perspective, local public officials might be viewed as involved in several different games, as consumers, users, facilitators, regulators, planners, and providers of telecommunications, each with its own stakes and strategies. But in each of these games, officials of local governments, for example, are often only one of many sets of players. Other players include federal, state, and regional agencies, telecommunications companies, hospitals, banks, department stores, and individual households. Therefore, actors like local governments, real estate agents, telecommunications industries, the mass media, banks, insurance companies, and public interest groups could be studied as actors playing both their individual games of cable franchising, real estate sales, and so forth, and interacting with other institution playing similar and different games, which together shape the development of telecommunications.

At the very least, it seems to offer a more promising characterization of decision-making processes than the marketplace metaphor, which has found wide currency. From an ecology of games perspective, the market is but one of many actors in one of many games shaping the develop-

ment of telecommunications networks and services. And it focuses attention on a neglected question: Who governs the development of telecommunications?

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